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## PROCEEDINGS OF SCIENTIFIC SOCIETIES.

**Novia Scotian Institute of Science.**—The 13th of April.—The following papers were read: Preliminary Notes on the Orthoptera of Nova Scotia. By Harry Piers, Esq. Notes on the Newt (*D. viridescens*) and on the Ring-Necked and Garter Snakes (*D. punctatus* and *E. sirtalis*.) By A. H. MacKay, Esq., LL. D., F. R. S. C., Superintendent of Education. On the Calculation of the Conductivity of Mixtures of Aqueous Solutions of Electrolytes having a common ion. By D. MacIntosh, Esq., Physical Laboratory, Dalhousie College.—HARRY PIERS, *Secretary*.

**Boston Society of Natural History.**—March 18th.—The following paper was read: Prof. Charles R. Cross, "The X rays." With experimental illustrations.

April 1st.—The following paper was read: Prof. William Libbey, "The Hawaiian Islands."

April 15th.—The following papers were read: Mr. M. L. Fuller, "A new occurrence of Carboniferous fossils in the Narragansett Basin. Prof. Alpheus Hyatt, "The evidence of the descent of man from the ape. A discussion upon the subject of Prof. Hyatt's followed, Prof. Thomas Dwight, Prof. C. S. Minot, and others participating.—SAMUEL HENSHAW, *Secretary*.

**American Philosophical Society.**—March 20th.—An obituary of Rev. W. H. Furness, by Jos. G. Rosengarten, was presented; Mrs. Cornelius Stevenson read a short paper on "Remains of Libyan Invaders of Egypt," discovered in 1895 by Mr. Flinders Petrie.

April 10.—Prof. Cope made some observations on the figures on a tablet from Nippur, pointing out the physical characters of the men and animals represented.

**Academy of Natural Science, Philadelphia.**—A meeting of the Anthropological Section was held the 13th of March.—The following papers were read: Prof. F. Edge Kavanagh, addressed the Section on "Right Handedness," was the subject discussed by Drs. Mills, Allen and Brinton, Professors Witmer, Culin, Jastrow and Gudeman.

Anthropological Section was held at the Academy on Friday, April 10th.—The following paper was read: Prof. Lightner Witmer on "Psycho-physical Measurement."—CHARLES MORRIS.

**New York Academy of Sciences.**—Biological Section, March 9th.—Mr. F. B. Sumner read a paper on "The Descent Tree of the Variations of a Land Snail from the Philippines," illustrated by a lantern slide. Mr. Sumner described the range in variation in size and markings in the shell, and arranged the varieties in the form of a tree of three branches diverging from the most generalized type. It was shown that these several varieties occupy the same geographical region and Mr. Sumner was of the opinion that their occurrence could not be explained by natural selection since if the colorations were supposed to be protective it would be impossible to explain the evolution of these three types. Prof. Osborn, in discussion, was inclined to take the same view. Dr. Dyar, however, thought the explanation by natural selection not necessarily excluded, since the variations seemed analogous to the dimorphism in sphinx larvae, which has been shown by Poulton to be probably due to this factor.

The other paper was by Dr. Arnold Graf on "The Problem of the Transmission of Acquired Characters."

Dr. Graf discussed the views of the modern schools of evolutionists and adopted the view that the transmission of acquired characters must be admitted to occur. He cited several examples which seemed to support this view, and especially discussed the sucker in leeches as an adaptation to parasitism and the evolution of the chambered shell in a series of fossil Cephalopods.

Prof. Osborn remarked in criticism of Dr. Graf's paper that this statement does not appear to recognize the distinction between *ontogenic* and *phylogenic* variation, or that the adult from any organism is an exponent of the stirp, or constitution. The Environment. If the environment is normal the adult would be normal, but if the environment (which includes all the atmospheric, chemical, nutritive, motor and psychical circumstances under which the animal is reared) were to change, the adult would change correspondingly; and these changes would be so profound that in many cases it would appear as if the constitution, or stirp, had also changed. Illustrations might be given of changes of the most profound character induced by changes in either of the above factors of the environment, and in the case of the motor factor or animal motion, the habits of the animal might, in the course of a life time, profoundly modify its structure. For example, if the human infant were brought up in the branches of a tree as an arboreal type instead of as a terrestrial, bi-pedal type, there is little doubt that some of the well known early adaptations to arboreal habit (such as the turning in of the soles of the feet, and the grasping of the

hands) might be retained and cultivated, thus a profoundly different type of man would be produced. Similar changes in the action of environment are constantly in progress in nature since there is no doubt that the changes of environment and the new habits which it so brings about far outstrip all changes in constitution. This fact which has not been sufficiently emphasized before, offers an explanation of the evidence advanced by Cope and other writers that change in the forms of the skeletons of the vertebrates first appears in ontogeny and subsequently in phylogeny. During the enormously long period of time in which habits induced ontogenic variations it is possible for natural selection to work very slowly and gradually upon predispositions to useful correlated variations, and thus what are primarily *ontogenic variations* become slowly apparent as *phylogenic variations* or congenital characters of the race.—C. L. BRISTOL, *Secretary*.

**The Academy of Science of St. Louis.**—March 16th.—Mr. Trelease presented some of the results of a recent study of the poplars of North America, made by him for the Systematic Botany of North America, and exhibited specimens of the several species and recognized varieties. Specimens were also exhibited of an apparently undescribed poplar from the mountains of northern Mexico, which he proposed to characterize shortly, and, for comparison, specimens of the two other species of poplar known to occur in Mexico, and of the European allies of the supposed new species, were laid before the Academy. The paper was discussed by Drs. Green, Glatfelter, and Kinner, Mr. Winslow, and Professor Kinealy.

The Academy, in co-operation with the joint committee of the scientific societies of Washington, adopted resolutions favoring the appointment of a permanent chief for the scientific work of the United States Department of Agriculture.

April 6th.—Prof. C. R. Sanger spoke on the commercial synthesis of acetylene, illustrating the flame procurable from this gas when burned with a proper proportion of air.

Prof. Sanger also presented the results of a preliminary biological and chemical examination into the ice supply of St. Louis, and exhibited a device for melting the ice in such examinations without danger of contamination from atmospheric ammonia, etc.

The Secretary presented for publication, by title, a paper by Mr. Charles Robertson, entitled "Flowers and Insects."

Mr. William H. Roever presented a paper on the geometry of the lines of force from an electrified body, in which it was shown that:

(a.) the curve representing a line of force proceeding from a system consisting of two parallel electrified lines, is the locus of the intersection of two straight lines, rotating in the same plane about these two parallel lines as axes with uniform but different angular velocities.  
(b.) the curve representing a line of force proceeding from a system consisting of two electrified points, is the locus of the intersection of two straight lines, rotating, in the same plane about parallel axes passing through those points, in such a manner that the versines of their angles of inclination to the plane of the axes change at uniform but different rates.

April 20th.—Dr. C. M. Woodward presented the results of a study of certain statistics of school attendance, from which it appeared that the average age of withdrawal from the public schools in three cities compared was as follows: Boston, 15.8; Chicago, 14.6; St. Louis, 13.7.

Professor J. H. Kinealy exhibited and gave a mathematical discussion of the Stang planimeter, an interesting and simple instrument of Danish invention, but improved in the United States.

WILLIAM TRELEASE, *Recording Secretary*.

**U. S. National Academy of Sciences.**—April 21, 1896.—The following papers were read: The Geological Efficacy of Alkali Carbonate Solutions, E. W. Hilgard; On the Color Relations of Atoms, Ions and Molecules, M. Carey Lea; On the Characters of the Otoceli-dæ, E. D. Cope; Exhibition of a Linkage whose motion shows the Laws of Refraction of Light, A. M. Mayer; Location in Paris of the Dwelling of Malus, in which he made the discovery of the Polarization of Light by Reflection, A. M. Mayer; (1) On Experiments showing that the X-Rays cannot be Polarized by passing through Herapathite; (2) The Density of Herapathite; (3) Formulæ of Transmission of the X-Rays through Glass, Tourmaline and Herapathite, A. M. Mayer; On the X-Rays from a Statical Current produced by a Rapidly Revolving Leather Belt, W. A. Rogers and Frederick Brown; Biographical Memoir of James Edward Oliver, G. W. Hill; Biographical Memoir of Charles Henry Davis, C. H. Davis; Biographical Memoir of George Engelmann, C. A. White; Legislation Relating to Standards, T. C. Mendenhall; On the Determination of the Coefficient of Expansion of Jessop's Steel, between the limits of  $0^{\circ}$  and  $64^{\circ}$  C., by the Interferential Method, E. W. Morley and W. A. Rogers; On the Separate Measurement, by the Interferential Method, of the Heating Effect of Pure Radiations and of an Envelope of Heated Air, W. A. Rogers; On the Logic of Quantity, C. S. Peirce; Judgement in Sensation and Perception, J. W. Powell; The Variability in Fermenting Power of the Colon

Bacillus under Different Conditions, A. W. Peckham (Presented by J. S. Billings); Experiments on the Reflection of the Röntgen Rays, O. N. Rood; Notes on Röntgen Rays, H. A. Rowland; Some Studies in Chemical Equilibrium, Ira Remsen; The Decomposition of Diazo-compounds by Alcohol, Ira Remsen; On Double Halides containing Organic Bases, Ira Remsen; Results of Researches of Forty Binary Stars, T. J. J. See; On a Remarkable New Family of Deep-sea Cephalopoda and its bearing on Molluscan Morphology, A. E. Verrill; The Question of the Molluscan Archetype, an Archi-mollusk, A. E. Verrill; On some Points in the Morphology and Phylogeny of the Gastropoda, A. E. Verrill; Source of X-Rays, A. A. Michelson and S. W. Stratton; The Relative Permeability of Magnesium and Aluminum to the Röntgen Rays, A. W. Wright; The State of Carbondioxide at the Critical Temperature, C. Barus; The Motion of a Submerged Thread of Mercury, C. Barus; On a Method of Obtaining Variable Capillary Apertures of Specified Diameter, C. Barus; On a New Type of Telescope Free from Secondary Color, C. S. Hastings; The Olindiadæ and other Medusæ, W. K. Brooks; Budding in Perophora, W. K. Brooks and George Lefevre; Anatomy of Yoldia, W. K. Brooks and Gilman Drew; On the *Pithecanthropus erectus* from the Tertiary of Java, O. C. Marsh.

C. D. Walcott and R. S. Woodward were elected members.

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## SCIENTIFIC NEWS.

Prof. Charles L. Edwards of the University of Cincinnati is to open a biological station this summer at Biscayne Bay, Florida. The place is well situated for the study of the tropical and sub-tropical flora and fauna, while its situation upon the continent makes it more readily accessible than the West India Islands. There will be opportunity for investigation while less mature students will have lectures and laboratory instructions. The session begins June 22d, and continues six weeks. A laboratory fee of \$25.00 covers tuition, use of apparatus, reagents, etc., and Prof. Edwards estimates the total necessary expenses of each student, including board, railroad fares, etc., at from \$100 to \$125. It is also proposed to open a department of laboratory supply and to furnish all available material properly prepared at reasonable rates. For further information address Prof. Edwards at the University of Cincinnati.